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Invitrogen™

CellTrace™ CFSE Cell Proliferation Kit, for flow cytometry

CellTrace™ CFSE Cell Proliferation Kit is used for in vitro and in vivo labeling of cells to trace multiple [Read more](#)

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Catalog Number	Sufficient For
C34554	180 Reactions
C34570	20 Reactions

Catalog number C34554 

Price (EUR) / 180 reactions
298,00

In stock

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Sufficient For: 180 Reactions

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CellTrace™ CFSE Cell Proliferation Kit is used for in vitro and in vivo labeling of cells to trace multiple generations using dye dilution by flow cytometry.

- Superior performance—bright, single-peak staining enables visualization of multiple generations
- Long-term signal stability—well-retained in cells for several days post stain
- Non-toxic—staining does not adversely effect cell health
- Simple, robust staining protocol

View a [selection guide for all CellTrace™ Cell Proliferation Kits for flow cytometry](#).

Superior fluorescent staining

Successful proliferation analysis by dye dilution (see figure below) requires an extremely bright dye to distinguish fluorescently labeled cells from auto-fluorescence after several cell divisions. The intense fluorescent staining provided by CellTrace™ CFSE dye enables the visualization of eight or more generations of proliferating cells before the signal is overwhelmed by intrinsic cellular auto-fluorescence. Consistent, homogeneous staining results in very little fluorescence variation between cells in a population, so distinct generations can be seen without any requirement for complex modeling software.

Long-term signal retention

Unlike stains that label the lipid membrane of cells, CellTrace™ CFSE dye easily crosses the plasma membrane and covalently binds inside cells where the stable, well-retained fluorescent dye is designed to provide a consistent signal, even after several days in a cell culture environment.

Non-toxic

CellTrace™ CFSE dye binds covalently to all free amines on the surface and inside of cells and shows little cytotoxicity, with minimal observed effect on the proliferative ability or biology of cells. Researchers have used CFSE SE labeling to show that transplantable hematopoietic cells proliferate in vitro in response to stimulation by a growth factor cocktail.

Simple, robust staining protocol

The CellTrace™ CFSE Cell Proliferation Kit contains convenient single-use vials of dry dye to permit small-scale experiments without preparing excess quantities of dye. A stock solution is prepared by dissolving the contents of a vial in anhydrous DMSO prior to use. To stain 1 mL of cells in protein-free medium, 1 µL of this stock solution is typically used. Cells should be stained for 20 minutes at room temperature with gentle agitation. A brief wash with complete medium will then quench any dye remaining in solution.

Consult user Manual for solubility instructions.

For Research Use Only. Not for use in diagnostic procedures.

Specifications	
Description	CellTrace™ Cell Proliferation Kit, 180 rxns, CFSE, Lyophilized, Fluorescent Detection Method, 492/517nm Excitation/Emission Wavelength, CellTrace™ CFSE Label/Dye, -5 to -30°C Storage, Use with Flow Cytometer
Detection Method	Fluorescence
For Use With (Application)	Proliferation Assay, Flow Cytometry
For Use With (Equipment)	Flow Cytometer
Product Type	Cell Proliferation Kit
Dye Type	Other Label(s) or Dye(s)
Emission	488 nm

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ThermoFisher
SCIENTIFIC



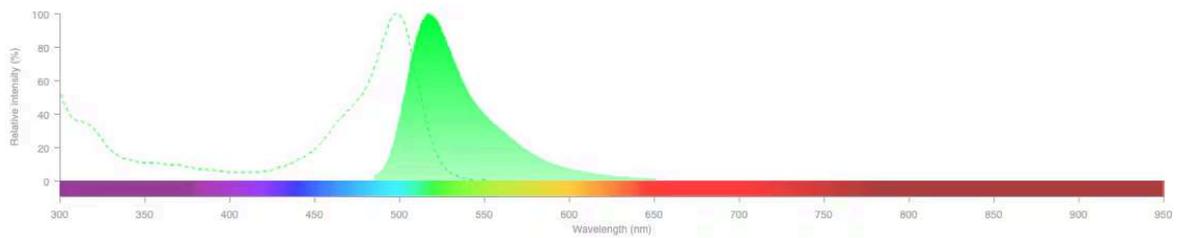
Product Line	CellTrace™
Quantity	1 Kit(s)
Reagent Type	CFSE & Related Compounds
Shipping Condition	Room Temperature
Solubility	DMSO (Dimethylsulfoxide)
Sufficient For	180 Reactions
Unit Size	180 reactions

Contents & Storage

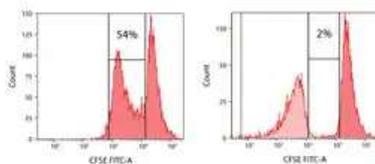
Contains 10 vials of CellTrace™ CFSE (lyophilized powder) and 1 vial of DMSO (500 µL). Store in freezer (-5°C to -30°C) and protect from light.

Fluorescence spectra

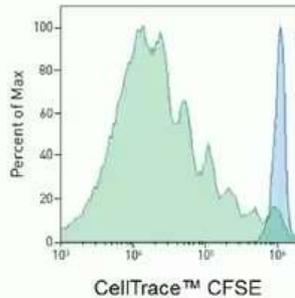
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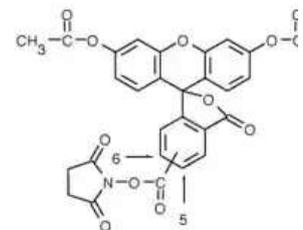
Figures



Suppressive capacity of isolated Treg cells.



Generational tracing using CellTrace™ CFSE



Chemical Structure

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<p>CellTrace™ Violet Cell Proliferation Kit, for flo...</p> <p>Catalog number: C34557</p> <p>489,00 / 180 assays</p> <p>Add to cart</p>	<p>CellTrace™ CFSE Cell Proliferation Kit, for flo...</p> <p>Catalog number: C34570</p> <p>136,00 / 20 reactions</p> <p>Add to cart</p>	<p>CellTra CMFD/</p> <p>Catalog</p> <p>554,00</p>
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2860836	Certificate of Analysis	Apr 10, 2024	C34554
2836718	Certificate of Analysis	Feb 29, 2024	C34554

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[Functional Characterization of a Novel Fluorescent Dye for Proliferation Analysis](#)

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Manuals



- [Quick Ref: CellTrace CFSE Cell Proliferation Kits](#)
- [User Guide: CellTrace Cell Proliferation Kits](#)

Protocols

- [Dynabeads® FlowComp™ Human CD4 – flow compatible and tube-based cell isolation](#)
- [CellTrace CFSE Cell Proliferation Kit](#)

Molecular Probes® Handbook

- [Assays for Cell Enumeration, Cell Proliferation and Cell Cycle—Section 15.4](#)
- [Membrane-Permeant Reactive Tracers—Section 14.2](#)

Frequently asked questions (FAQs)

- What are the advantages of flow cytometry?
- I am using the CellTrace Cell Proliferation reagents and am not obtaining good separation of my cell generation peaks. How can I improve the peak separation?
- What kinds of applications can I run on a flow cytometer?
- I want to track my cells over time, and you have a lot of options to choose from. How do I pick the right one?
- I want to track my cells with a nucleic acid stain, like DAPI or Hoechst dye. Do you recommend this?

[View more](#)

Citations & References

Citations & References

Abstract

[Optimized staining and proliferation modeling methods for cell division monitoring using cell tracking dyes.](#)

Authors: Tario JD, Humphrey K, Bantly AD, Muirhead KA, Moore JS, ...
 ...e PK,

'Fluorescent cell tracking dyes, in combination with flow and image cytometry, are powerful tools with which to study the interactions and fates of different cell types in vitro and in vivo.(1-5) Although there are

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Appraising the suitability of succinimidyl and lipophilic fluorescent dyes to track proliferation in non-quiescent cells by dye dilution. [↗](#)

Authors: Filby A, Begum J, Jalal M, Day W,

Journal:

PubMed ID: 25802116

Successful completion of the cell cycle usually results in two identical daughter progeny. This process of generational doubling is termed proliferation and when it occurs in a regulated fashion the benefits range from driving embryonic development to mounting a successful immune response. However when it occurs in a dis-regulated fashion, ... [More](#)

TLR4 signaling induced by lipopolysaccharide or paclitaxel regulates tumor survival and chemoresistance in ovarian cancer. [↗](#)

Authors: Szajnik M, Szczepanski MJ, Czystowska M, Elishaev E, Mandapathil M, Nowak-Markwitz E, Spaczynski M, Whiteside TL,

Journal: Oncogene

PubMed ID: 19826413

Toll-like receptors (TLRs) expressed on immune cells trigger inflammatory responses. TLRs are also expressed on ovarian cancer (OvCa) cells, but the consequences of signaling by the TLR4/MyD88 pathway in these cells are unclear. Here, TLR4 and MyD88 expression in OvCa tissues (n=20) and cell lines (OVCAR3, SKOV3, AD10, A2780 and ... [More](#)

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